

ملودی رویتین

۱۵، ۵

$$x(x-4)$$

$$y = \sqrt{\frac{x^2 - 4x}{x^2 - x}} = \frac{x(x-4)}{x(x-1)(x+1)(x-1)}$$

$$y = \sqrt{\frac{x^2 - x^2}{x^2 - x}} = \frac{x^2(x-1)(x-1)(x+1)}{x(x-1)(x+1)}$$

$D_f = (-1, 0) \cup (0, 1) \cup [4, +\infty)$

$D_f = \mathbb{R} - \{-1, 0, 1\}$

$$y = \frac{x+1}{\sqrt{x+|x|}} \quad x+|x| > 0 \quad D_f = (0, +\infty)$$

$$y = \frac{1}{\sqrt{2-x}} \quad 2-x > 0 \quad D_f = (-\infty, 2)$$

$$y = \frac{1}{\sqrt{x|x|}} \quad x|x| > 0 \quad D_f = (0, +\infty)$$

$$y = \sqrt{2-x} \quad 2-x \geq 0 \quad D_f = (-\infty, 2]$$

$$y = \sqrt{\left[x - \frac{1}{x}\right] + \left[x + \frac{1}{x}\right]} \quad \left[x - \frac{1}{x}\right] + \left[x + \frac{1}{x}\right] \geq 0$$

$$\left[n - \frac{1}{x}\right] + \left[n - \frac{1}{x}\right] + 1 \geq 0 \rightarrow 2\left[n - \frac{1}{x}\right] \geq -1 \rightarrow \left[n - \frac{1}{x}\right] \geq -\frac{1}{2} \rightarrow n - \frac{1}{x} \geq 0 \rightarrow n \geq \frac{1}{x}$$

$$n - \frac{1}{x} \in \mathbb{Z} \rightarrow n \in \mathbb{Z} + \frac{1}{x}$$

$$D_y = \{n | n = k + \frac{1}{x}, k \in \mathbb{Z}\}$$

۴- الی

ب

$$y = \sqrt{\left[x - \frac{1}{r}\right] + \left[-x + \frac{1}{r}\right]}$$



دامنه (۵)

$$y = \frac{r}{\sin x - 1} \neq 0 \quad \sin x \neq 1$$

$$D_p = \mathbb{R} - \left\{2k\pi + \frac{\pi}{r}\right\}$$

$$y = \frac{r}{r \sin^2 x - 1} \neq 0 \quad r \sin^2 x \neq 1$$

$$\sin^2 x \neq \frac{1}{r} \rightarrow \sin x \neq \pm \sqrt{\frac{1}{r}}$$

$$D_p = \mathbb{R} - \left\{\frac{k\pi}{r} + \frac{\pi}{r}\right\}$$

دامنه (۶)

$$y = \sqrt{r \sin x - 1} \quad r \sin x \geq 1 \quad \sin x \geq \frac{1}{r}$$

$$D_p = \left[2k\pi + \frac{\pi}{r}, 2k\pi + \frac{\pi}{r}\right]$$



$$y = \sqrt{\cos x - 1}$$

$$\cos x \geq 1 \quad D = \{2k\pi\}$$

دامنه

دامنه (۷)

$$\cos y = |x| - r \quad -1 \leq |x| - r \leq 1 \rightarrow r \leq |x| \leq r+1$$

دامنه

$$-r \leq x \leq -r+1 \quad \text{or} \quad r \leq x \leq r+1$$

$$y = \arcsin(x^2 + 3x + 1)$$

$$D_p = [-r-1] \cup [r, r+1]$$

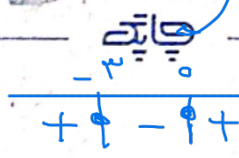
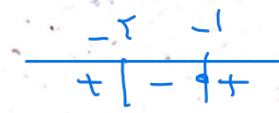
$$-1 \leq x^2 + 3x + 1 \leq 1$$

دامنه

$$D = [-r-1] \cup [-6, 0]$$

$$0 \leq (x+1)(x+4) \leq r \quad -r \leq x \leq 0$$

$$x \leq -4 \quad \text{or} \quad x \geq -1$$

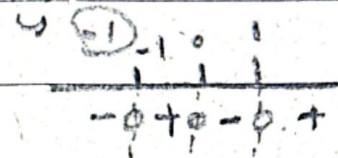


$$y = \sqrt{2 - \log_2(x-2)} \quad x-2 > 0 \rightarrow \boxed{x > 2} \quad (A)$$

$$2 - \log_2(x-2) \geq 0 \rightarrow \log_2(x-2) \leq 2 \rightarrow x-2 \leq 4 \rightarrow \boxed{x \leq 6}$$

$$D = (2, 6]$$

$$y = \log(x^3 - x) \quad x^3 - x > 0$$



(P)

$$D_f = (-1, 0) \cup (1, +\infty)$$

$$y = \frac{x}{x^2 + 1} \quad D = \mathbb{R} \quad \text{صورت} \quad \text{سالم دست} \quad \text{ندیری} \quad (4)$$

$$y = \frac{x}{x^2 - 1} \quad x^2 - 1 \neq 0 \quad x \neq \pm 1 \quad D = \mathbb{R} - \{\pm 1\}$$

$$y = \frac{x}{x^2 - 2} \quad x^2 - 2 \neq 0 \quad x \neq \pm \sqrt{2} \quad D = \mathbb{R} - \{\pm \sqrt{2}\}$$

$$y = \frac{x}{x^2 - 3} \quad x^2 - 3 \neq 0 \quad x \neq \pm \sqrt{3} \quad D = \mathbb{R} - \{\pm \sqrt{3}\}$$

$$y = (x+1)! \quad x+1 \in \mathbb{N} \quad x \in \mathbb{N} - 1$$

$$D = \left\{ x \mid x = \frac{k-1}{2}, k \in \mathbb{N} \right\}$$

...../...../.....

$$y = \left(\frac{rx - r}{rx - \omega} \right) ! \quad \frac{rx - r}{rx - \omega} \in W / \quad rx - r = rxW / - \Delta W /$$

$$rx - rxW / = r - \Delta W /$$

$$D_f = \left\{ x \mid x = \frac{\Delta K - r}{rx - r}, K \in W / \right\} \quad x(rx - rxW /) = r - \Delta W /$$

$$x = \frac{r - \Delta W /}{rx - rxW /} \Rightarrow \frac{\Delta W - r}{rxW - r}$$

(2) ✓